



Annex F Alta Fire Protection District

F.1 Introduction

This Annex details the hazard mitigation planning elements specific to Alta Fire Protection District (AFPD or District), a previously participating jurisdiction to the 2016 Placer County Local Hazard Mitigation Plan (LHMP) Update. This Annex is not intended to be a standalone document, but appends to and supplements the information contained in the Base Plan document. As such, all sections of the Base Plan, including the planning process and other procedural requirements apply to and were met by the District. This Annex provides additional information specific to AFPD, with a focus on providing additional details on the risk assessment and mitigation strategy for this District.

F.2 Planning Process

As described above, the District followed the planning process detailed in Chapter 3 of the Base Plan. In addition to providing representation on the Placer County Hazard Mitigation Planning Committee (HMPC), the District formulated their own internal planning team to support the broader planning process requirements. Internal planning participants, their positions, and how they participated in the planning process are shown in Table F-1. Additional details on plan participation and District representatives are included in Appendix A.

Table F-1 AFPD – Planning Team

Name	Position/Title	How Participated
Ed Snider	Board Director	Primary Contact / Initial LHMP editor for Alta Fire Protection Dist.

Coordination with other community planning efforts is paramount to the successful implementation of this LHMP Update. This section provides information on how the District integrated the previously approved 2016 Plan into existing planning mechanisms and programs. Specifically, the District incorporated into or implemented the 2016 LHMP through other plans and programs shown in Table F-2.

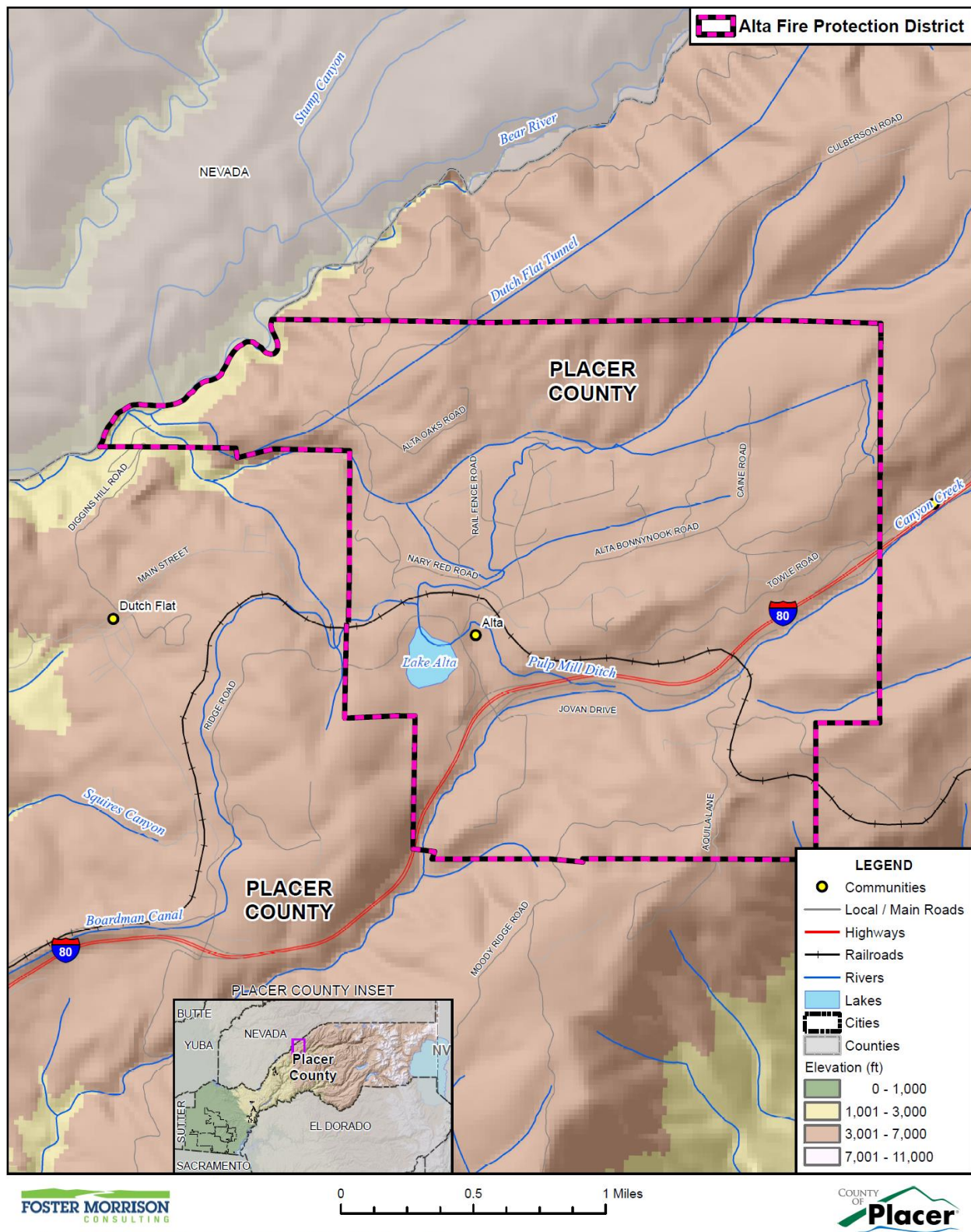
Table F-2 2016 LHMP Incorporation

Planning Mechanism 2016 LHMP Was Incorporated/Implemented In.	Details: How was it incorporated?
Coordination with other agencies and groups	The Alta Fire Protection District does not have an official planning group, however many of its board members, volunteers and other involved persons are members of other fire and life safety groups and work in coordination with those groups to combine resources to implement the goals of the LHMP most effectively. For example, some of the lead individuals for creating the Alta Firewise Community group and CERT were members involved in the Alta Fire Protection District.

F.3 District Profile

The District profile for the AFRPD is detailed in the following sections. Figure F-1 displays a map and the location of the District within Placer County.

Figure F-1 AFD



F.3.1. Overview and Background

The Alta Fire Department formed in 1948 to provide fire protection and public safety services for the residents of Alta. The Alta FPD was established after an election of voters, within the boundaries of the proposed District, and by a resolution put forth by the Placer County Board of Supervisors in 1958 to administer and govern the business and affairs of the Alta Fire Department. The District is a California Independent Non-enterprise Special District governed by California Health and Safety Code, Section 13800-13970 et seq. (Cited as the Fire District Law of 1987).

The Alta FPD services a 4.12 square mile area that houses approximately 640 full time residents. The District services the community of Alta. Alta sits at 3,477 above mean sea level in elevation and is a central location through which the Transcontinental Railroad operated by Union Pacific, Trans-Sierra petroleum pipeline operated by Kinder Morgan, Interstate 80 operated by CalTrans, and the Spaulding/Bowman Hydro Electric Project operated by PG&E. Interstate 80 has the highest traffic volume of any road in Northern California; the Transcontinental Railroad is the rail corridor through which the most volume of freight passes anywhere west of the Rockies; and the Trans-Sierra petroleum pipeline conveys the largest volume of petroleum products in Northern California.

F.4 Hazard Identification

AFPD identified the hazards that affect the District and summarized their location, extent, frequency of occurrence, potential magnitude, and significance specific to District (see Table F-3).

Table F-3 AFPD—Hazard Identification Assessment

Hazard	Geographic Extent	Likelihood of Future Occurrences	Magnitude/Severity	Significance	Climate Change Influence
Agriculture Pests and Diseases	Limited	Unlikely	Negligible	Low	Medium
Avalanche	Limited	Unlikely	Negligible	Low	Medium
Climate Change	Significant	Likely	Critical	Moderate	–
Dam Failure	Limited	Occasional	Negligible	Low	Medium
Drought & Water Shortage	Extensive	Likely	Critical	High	High
Earthquake	Limited	Likely	Limited	Moderate	Low
Floods: 1%/0.2% annual chance	Limited	Occasional	Negligible	Low	Medium
Floods: Localized Stormwater	Likely	Occasional	Limited	Moderate	Medium
Landslides, Mudslides, and Debris Flows	Likely	Occasional	Limited	Moderate	Medium
Levee Failure	Limited	Occasional	Negligible	Low	Medium
Pandemic	Limited	Occasional	Limited	Low	Medium
Seiche	Limited	Unlikely	Negligible	Low	Medium
Severe Weather: Extreme Heat	Extensive	Highly Likely	Critical	Medium	High
Severe Weather: Freeze and Snow	Extensive	Highly Likely	Critical	Medium	Medium
Severe Weather: Heavy Rains and Storms	Extensive	Highly Likely	Critical	Medium	Medium
Severe Weather: High Winds and Tornadoes	Extensive	Highly Likely	Critical	Medium	Low
Tree Mortality	Extensive	Highly Likely	Catastrophic	High	High
Wildfire	Extensive	Highly Likely	Catastrophic	High	High
<p>Geographic Extent Limited: Less than 10% of planning area Significant: 10-50% of planning area Extensive: 50-100% of planning area</p> <p>Likelihood of Future Occurrences Highly Likely: Near 100% chance of occurrence in next year, or happens every year. Likely: Between 10 and 100% chance of occurrence in next year, or has a recurrence interval of 10 years or less. Occasional: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years. Unlikely: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years.</p> <p>Magnitude/Severity Catastrophic—More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths Critical—25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability Limited—10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability Negligible—Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid</p> <p>Significance Low: minimal potential impact Medium: moderate potential impact High: widespread potential impact</p> <p>Climate Change Influence Low: minimal potential impact Medium: moderate potential impact High: widespread potential impact</p>					

F.5 Hazard Profile and Vulnerability Assessment

The intent of this section is to profile the District's hazards and assess the District's vulnerability separate from that of the Placer County Planning Area as a whole, which has already been assessed in Section 4.3 Hazard Profiles and Vulnerability Assessment in the Base Plan. The hazard profiles in the Base Plan discuss overall impacts to the Placer County Planning Area and describes the hazard problem description, hazard location and extent, magnitude/severity, previous occurrences of hazard events and the likelihood of future occurrences. Hazard profile information specific to the District is included in this Annex. This vulnerability assessment analyzes the property and other assets at risk to hazards ranked of medium or high significance specific to the District. For more information about how hazards affect the County as a whole, see Chapter 4 Risk Assessment in the Base Plan.

F.5.1. Hazard Profiles

Each hazard vulnerability assessment in Section 0, includes a hazard profile/problem description as to how each medium or high significant hazard (as shown in Table F-3) affects the District and includes information on past hazard occurrences and the likelihood of future hazard occurrence. The intent of this section is to provide jurisdictional specific information on hazards and further describes how the hazards and risks differ across the Placer County Planning Area.

F.5.2. Vulnerability Assessment and Assets at Risk

This section identifies the District's total assets at risk, including values at risk, populations at risk, critical facilities and infrastructure, natural resources, and historic and cultural resources. Growth and development trends are also presented for the District. This data is not hazard specific, but is representative of total assets at risk within the District.

Assets at Risk and Critical Facilities

This section considers the AFD's assets at risk, with a focus on key District assets such as critical facilities, infrastructure, and other District assets and their values. With respect to District assets, the majority of these assets are considered critical facilities as defined for this Plan. Critical facilities are defined for this Plan as:

Any facility, including without limitation, a structure, infrastructure, property, equipment or service, that if adversely affected during a hazard event may result in severe consequences to public health and safety or interrupt essential services and operations for the community at any time before, during and after the hazard event.

This definition is further refined by separating out three classes of critical facilities:

Class 1 facilities include those facilities that contribute to command, control, communications and computer capabilities associated with managing an incident from initial response through recovery.

Class 2 facilities include those facilities that house Emergency Services capabilities.

Class 3 facilities are those facilities that enable key utilities and can be used as evacuation centers/shelters/mass prophylaxis sites, etc.

Additional information on the three classes of critical facilities is described further in Section 4.3.1 of the Base Plan.

Table F-4 lists critical facilities and other District assets identified by the District Planning Team as important to protect in the event of a disaster. AFPD's physical assets, valued at over \$900 million, consist of the buildings and infrastructure to support the District's operations, as well as assets the District protects.

Table F-4 AFPD Critical Facilities, Infrastructure, and Other District Assets

Name of Asset	Facility Type	Replacement Value	Which Hazards Pose Risk
Station 98	Fire Department	\$3,000,000	Wildfire, Hazardous Materials spill zone for railroad
Alta-Dutch Flat Elementary School	School	>\$10,000,000	Wildfire, Landslide, Hazardous Material Spill Zone for Railroad
Sierra First Baptist Church	Religious / Historical	\$600,000	Wildfire, Hazardous Material Spill Zone for Railroad
Camp Alta	Religious / Historical	\$2,000,000	Wildfire
Cal Fire Station 33	Fire Department	\$2,975,000	Wildfire, Hazardous Material Spill Zone for Railroad
Alta Powerhouse and Substation	Infrastructure – Historical	.	Oldest hydroelectric power-producing unit in the PG&E system, first produced electricity in 1902. Wildfire, Flooding
PCWA Hydrants	Infrastructure / Water Supply	>\$2 million	Many structures protecting these are wooden, at risk in wildfire
Alta Powerhouse After-bay and Dam	Infrastructure / Water Supply	>\$100 million	Failure would cause major flooding
Lake Alta	Recreation / Water Supply	Unknown	Public Water Supply in Railroad Hazardous materials spill zone Wildfire
Alta Reservoir	Infrastructure / Water Supply	>\$50 Million	Public Water Supply Wildfire
PCWA Boardman Canal	Infrastructure / Water Supply	>\$20 million	Key component for PCWA raw water transportation system, runs from Alta to Rocklin

Name of Asset	Facility Type	Replacement Value	Which Hazards Pose Risk
UP Railroad	Infrastructure / Commercial Corridor	>\$100 million	Hazardous / flammable materials transportation
Kinder Morgan Pipeline	Infrastructure / Critical Utility	>\$100 million	Hazardous/ flammable materials transportation
Interstate 80	Infrastructure / Commercial Corridor	>\$500 million	Critical primary ingress / egress access for multiple communities

Source: AFPD

Natural Resources

AFPD has a variety of natural resources of value to the District. These natural resources parallel that of Placer County as a whole. Information can be found in Section 4.3.1 of the Base Plan.

Historic and Cultural Resources

AFPD has a variety of historic and cultural resources of value to the District. These historic and cultural resources parallel that of Placer County as a whole. Information can be found in Section 4.3.1 of the Base Plan.

Populations Served

Also potentially at risk should the District be affected by natural hazard events are the populations served by the District. AFPD provides services to residents and properties within the Alta Fire Protection District Boundary and to the surrounding communities through a mutual aid agreement. The areas regularly served are Alta, Baxter, Crystal Springs, Dutch Flat, Emigrant Gap, Gold Run, Moody Ridge, Nyack, Secret Town and Yuba Gap; essentially, the communities along the Interstate 80 corridor from about 5 miles east of Colfax (Highway 174 exit) to the Highway 20 exit on Interstate 80

It is important to note that there are several elderly, disabled, and low income people in the Alta community. In the case of a wildfire evacuation, these people may not have transportation. Likewise, in the event of a power outage during the winter months, these special populations may not be able to get to a shelter for warmth. Alta FPD has a Local Community Special Needs Citizen Network that is working to compile a database of these individuals.

Growth and Development Trends

General growth in the District parallels that of the Placer County Planning Area as a whole. Information can be found in Section 4.3.1 of the Base Plan. Most parcels/properties within the Alta Fire Protection District have been built upon so new construction is what is called in-fill of the few vacant properties that still exist (estimated to be <10% of total parcels in the District). The District is currently in discussions with CalFire and Placer County regarding the service area boundary. By the time the LHMP is updated in 5 years, the District Boundary may change. This change would most likely be either inclusion of the Dutch Flat Fire District or dissolution of the Alta Fire Protection District into Dutch Flat Fire District or Placer

County Fire District. Discussions are ongoing and District boundary changes and services provided be identified before the end of 2022.

Development since 2016

No District facilities have been constructed since 2016. Maintenance and upkeep of the facilities owned and operated by the Alta Fire Protection District are current. No major additions or upgrades to facilities at the time of this update.

Future Development

The District has no control over future development in areas the District services. Future development in these areas parallels that of the Placer County Planning Area. The District is currently working with Placer County and CalFire on the Alta Fire Protection District Boundaries and how they might change in relation to surrounding Fire District Boundaries. Change made, if any, will likely occur by the end of 2022. More general information on growth and development in Placer County as a whole can be found in “Growth and Development Trends” in Section 4.3.1 Placer County Vulnerability and Assets at Risk of the Base Plan.

F.5.3. Vulnerability to Specific Hazards

This section provides the vulnerability assessment, including any quantifiable loss estimates, for those hazards identified above in Table F-3 as high or medium significance hazards. Impacts of past events and vulnerability of the District to specific hazards are further discussed below (see Section 4.1 Hazard Identification in the Base Plan for more detailed information about these hazards and their impacts on the Placer County Planning Area). Methodologies for evaluating vulnerabilities and calculating loss estimates are the same as those described in Section 4.3 of the Base Plan.

An estimate of the vulnerability of the District to each identified priority hazard, in addition to the estimate of likelihood of future occurrence, is provided in each of the hazard-specific sections that follow. Vulnerability is measured in general, qualitative terms and is a summary of the potential impact based on past occurrences, spatial extent, and damage and casualty potential. It is categorized into the following classifications:

- **Extremely Low**—The occurrence and potential cost of damage to life and property is very minimal to nonexistent.
- **Low**—Minimal potential impact. The occurrence and potential cost of damage to life and property is minimal.
- **Medium**—Moderate potential impact. This ranking carries a moderate threat level to the general population and/or built environment. Here the potential damage is more isolated and less costly than a more widespread disaster.
- **High**—Widespread potential impact. This ranking carries a high threat to the general population and/or built environment. The potential for damage is widespread. Hazards in this category may have occurred in the past.
- **Extremely High**—Very widespread with catastrophic impact.

Depending on the hazard and availability of data for analysis, this hazard specific vulnerability assessment also includes information on values at risk, critical facilities and infrastructure, populations at risk, and future development.

Climate Change

Likelihood of Future Occurrence–Likely

Vulnerability–Medium

Hazard Profile and Problem Description

Climate change adaptation is a key priority of the State of California. The 2018 State of California Multi-Hazard Mitigation Plan stated that climate change is already affecting California. Sea levels have risen by as much as seven inches along the California coast over the last century, increasing erosion and pressure on the state’s infrastructure, water supplies, and natural resources. The State has also seen increased average temperatures, more extreme hot days, fewer cold nights, a lengthening of the growing season, shifts in the water cycle with less winter precipitation falling as snow, and earlier runoff of both snowmelt and rainwater in the year. In addition to changes in average temperatures, sea level, and precipitation patterns, the intensity of extreme weather events is also changing.

Location and Extent

Climate change is a global phenomenon. It is expected to affect the whole of the District, Placer County, and State of California. There is no scale to measure the extent of climate change. Climate change exacerbates other hazards, such as drought, extreme heat, flooding, wildfire, and others. The speed of onset of climate change is very slow. The duration of climate change is not yet known, but is feared to be tens to hundreds of years.

Past Occurrences

Climate change has never been directly linked to any declared disasters. While the District noted that climate change is of concern, no specific impacts of climate change could be recalled. The District and HMPC members did, however, note that in Placer County, the strength of storms does seem to be increasing and the temperatures seem to be getting hotter. The direct impacts of climate change over the past decade were an increase in fire activity because of lower amounts of annual precipitation, longer dry seasons, increased fuel loads due to bark beetle kill and primary growth of flashy fuels and shrubs and poor forest management of these primary and secondary vegetation growth patterns after large swaths of beetle kill trees are removed resulting in high levels of flashy fuel loads.

Vulnerability to and Impacts from Climate Change

The 2014 California Adaptation Planning Guide (APG) prepared by California OES and CNRA was developed to provide guidance and support for local governments and regional collaboratives to address the unavoidable consequences of climate change. California’s APG: Understanding Regional Characteristics has divided California into 11 different regions based on political boundaries, projected climate impacts, existing environmental setting, socioeconomic factors and regional designations. Placer

County falls within the North Sierra Region characterized as a sparsely settled mountainous region where the region's economy is primarily tourism-based. The region is rich in natural resources, biodiversity, and is the source for the majority of water used by the state. This information can be used to guide climate adaptation planning in the District and Placer County Planning Area.

The California APG: Understanding Regional Characteristics identified the following impacts specific to the North Sierra region in which the Placer County Planning Area is part of:

- Temperature increases
- Decreased precipitation
- Reduced snowpack
- Reduced tourism
- Ecosystem change
- Sensitive species stress
- Increased wildfire

Assets at Risk

The District noted that its facilities will most likely not be at risk directly from climate change, however all assets listed in Table F-4 will be at risk from indirect issues due to climate change, most notable from increased wildfire risks.

Drought & Water Shortage

Likelihood of Future Occurrence—Likely

Vulnerability—High

Hazard Profile and Problem Description

Drought is a complex issue involving many factors—it occurs when a normal amount of precipitation and snow is not available to satisfy an area's usual water-consuming activities. Drought can often be defined regionally based on its effects. Drought is different than many of the other natural hazards in that it is not a distinct event and usually has a slow onset. Drought can severely impact a region both physically and economically. Drought affects different sectors in different ways and with varying intensities. Adequate water is the most critical issue and is critical for agriculture, manufacturing, tourism, recreation, and commercial and domestic use. As the population in the area continues to grow, so will the demand for water.

Location and Extent

Drought and water shortage are regional phenomenon. The whole of the County, as well as the whole of the District, is at risk. The US Drought Monitor categorizes drought conditions with the following scale:

- None
- D0 – Abnormally dry
- D1 – Moderate Drought
- D2 – Severe Drought

- D3 – Extreme drought
- D4 – Exceptional drought

Drought has a slow speed of onset and a variable duration. Drought can last for a short period of time, which does not usually affect water shortages and for longer periods. Should a drought last for a long period of time, water shortage becomes a larger issue. Current drought conditions in the District and the County are shown in Section 4.3.10 of the Base Plan.

Past Occurrences

There has been one state and one federal disaster declaration due to drought since 1950. This can be seen in Table F-5.

Table F-5 Placer County – State and Federal Disaster Declarations Summary 1950-2020

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Drought	1	2014	1	1977

Source: Cal OES, FEMA

Since drought is a regional phenomenon, past occurrences of drought for the District are the same as those for the County and includes 5 multi-year droughts over an 85-year period. Details on past drought occurrences can be found in Section 4.3.10 of the Base Plan.

A water shortage event occurred in January of 2016. Contamination of water supply requiring all lines water mains and distribution lines to be flushed caused water to be non-potable for about 2 weeks. The source of contamination was likely diesel fuel that drained into the creek. It was not determined if a spilled a container of fuel on the freeway or if it was intentionally dumped. The fuel went unnoticed for 3-days because the reservoir was frozen over, and the fuel was trapped between the ice and the top of the water, so no sheen was visible. This also pushed the fuel down in depth in of the water column to the extent that it was at the same level as the water suction/inlet for the Alta Water system. Residences noticed the odor, but testing of the water supply came up with no contaminants for that 3-day period until some of the lake had thawed. There have been at least 2 other incidents where vehicles ended up in either the creek or canal upstream of the lakes water diversion and 2 big rigs in addition that have ended up in Canyon creek just downstream of the diversion since this incident took place. Occurrences of a measurable quantity of substances ending up in the creek is about 1-2 times each year. The District had jet fuel truck in the creek about 3 years ago for which clean-up only recently wrapped up (2020), a truck left the freeway just after the Alta exit and went down the embankment stopping on Casa Loma road frontage just before the creek, a big rig leaving the freeway and ending up in Canyon Creek about 3 years ago and a car that flipped over and landed upside down in the canal servicing the reservoir on Alta Reservoir Rd. These are just 4 of the dozens of incidents that occur each decade.

Vulnerability to and Impacts from Drought and Water Shortage

Based on historical information, the occurrence of drought in California, including the District, is cyclical, driven by weather patterns. Drought has occurred in the past and will occur in the future. Periods of actual

drought with adverse impacts can vary in duration, and the period between droughts can be extended. Although an area may be under an extended dry period, determining when it becomes a drought is based on impacts to individual water users. Drought impacts are wide-reaching and may be economic, environmental, and/or societal. Tracking drought impacts can be difficult.

The most significant qualitative impacts associated with drought in the Placer County Planning Area are those related to water intensive activities such as agriculture, wildfire protection, municipal usage, commerce, tourism, recreation, and wildlife preservation. Mandatory conservation measures are typically implemented during extended droughts. Drought conditions can also cause soil to compact and not absorb water well, potentially making an area more susceptible to flooding. With a reduction in water, water supply issues based on water rights becomes more evident. Climate change may create additional impacts to drought and water shortage in the County and the District.

During periods of drought, vegetation can dry out which increases fire risk. Drought that occurs during periods of extreme heat and high winds can cause Public Safety Power Shutoff (PSPS) events to be declared in the County. More information on power shortage and failure can be found in the Severe Weather: Extreme Heat Section below, as well as in Section 4.3.2 of the Base Plan.

Drought is a significant hazard to this forested District. Recent years of drought stress have resulted in high mortality levels, leaving the forest susceptible to disease and insect infestation. As a result of recent drought conditions throughout California, infestations of the Pine Beetle are on the rise and pockets of mortality are rapidly spreading. Several areas within the District forests show signs of Pine Beetle and thus will become more vulnerable to wildfire. Drought conditions also may impact the water supply of people residing within District boundaries.

Assets at Risk

All assets listed in Table F-4 will be at risk from issues related to drought, with increased wildfire behavior and tree mortality leading to increased fire risk being the most significant issue. A secondary issue are the properties in the district relying on wells for their water supply as a significant number of these wells have decreased output volumes and, in some cases, run completely dry, however, all of the assets located in Table F-4 are connected to the public water supply provided by PCWA (Placer County Water Agency).

Earthquake

Likelihood of Future Occurrence—Likely
Vulnerability—Medium

Hazard Profile and Problem Description

An earthquake is caused by a sudden slip on a fault. Stresses in the earth's outer layer push the sides of the fault together. Stress builds up, and the rocks slip suddenly, releasing energy in waves that travel through the earth's crust and cause the shaking that is felt during an earthquake. Earthquakes can cause structural damage, injury, and loss of life, as well as damage to infrastructure networks, such as water, power, gas, communication, and transportation. Earthquakes may also cause collateral emergencies including dam and levee failures, seiches, hazmat incidents, fires, avalanches, and landslides. The degree of damage depends

on many interrelated factors. Among these are: the magnitude, focal depth, distance from the causative fault, source mechanism, duration of shaking, high rock accelerations, type of surface deposits or bedrock, degree of consolidation of surface deposits, presence of high groundwater, topography, and the design, type, and quality of building construction.

Location and Extent

The amount of energy released during an earthquake is usually expressed as a magnitude and is measured directly from the earthquake as recorded on seismographs. An earthquake's magnitude is expressed in whole numbers and decimals (e.g., 6.8). Seismologists have developed several magnitude scales, as discussed in Section 4.3.11 of the Base Plan. Placer County itself is traversed by a series of northwest-trending faults, called the Foothill Fault Zone, that are related to the Sierra Nevada uplift. This was the source of Oroville's 1975 earthquake (and an earlier event in the 1940s). Subsequent research of these events led to the identification and naming of the zone and questions about the siting and design of the proposed Auburn Dam. Earthquakes on nearby fault segments in the zone could be the source of ground shaking in the Placer County Planning Area.

Although portions of western and eastern Placer County are located in a seismically active region, no known faults actually go through any of the cities or towns. However, the Bear Mountain and the Melones faults are situated approximately three to four miles west and east of the City of Auburn respectively. Earthquakes on these two faults would have the greatest potential for damaging buildings in Auburn, especially the unreinforced masonry structures in the older part of the city and homes built before 1960 without adequate anchorage of framing and foundations. Similar lower magnitude but nearby earthquakes are capable of producing comparable damages in other Placer County communities.

Another measure of earthquake severity is intensity. Intensity is an expression of the amount of shaking at any given location on the ground surface. Seismic shaking is typically the greatest cause of losses to structures during earthquakes. The District is located in an area where few earthquakes of significant magnitude occur, so both magnitude and intensity of earthquakes are expected to remain low. Seismic shaking maps for the area show Placer County and the District fall within a low to moderate shake risk.

Past Occurrences

There have been no past federal or state disaster declarations from this hazard. The District noted no past occurrences of earthquakes or that affected the District in any meaningful way.

Vulnerability to and Impacts from Earthquake

The combination of plate tectonics and associated California coastal mountain range building geology generates earthquake as a result of the periodic release of tectonic stresses. Placer County lies in the center of the North American and Pacific tectonic plate activity. There have been earthquakes as a result of this activity in the historic past, and there will continue to be earthquakes in the future of the California north coastal mountain region.

Fault ruptures itself contributes very little to damage unless the structure or system element crosses the active fault; however, liquefaction can occur further from the source of the earthquake. In general, newer

construction is more earthquake resistant than older construction due to enforcement of improved building codes. Manufactured buildings can be very susceptible to damage because their foundation systems are rarely braced for earthquake motions. Locally generated earthquake motions and associated liquefaction, even from very moderate events, tend to be more damaging to smaller buildings, especially those constructed of unreinforced masonry (URM) and soft story buildings. The District believes there are no URM or soft story buildings in the District.

The Uniform Building Code (UBC) identifies four seismic zones in the United States. The zones are numbered one through four, with Zone 4 representing the highest level of seismic hazard. The UBC establishes more stringent construction standards for areas within Zones 3 and 4. All of California lies within either Zone 3 or Zone 4. The AFPD is within the less hazardous Zone 3.

Impacts from earthquake in the District will vary depending on the fault that the earthquake occurs on, the depth of the earthquake strike, and the intensity of shaking. Large events could cause damages to infrastructure, critical facilities, residential and commercial properties, and possible injuries or loss of life.

Assets at Risk

All assets listed in Table F-4 will be at risk from earthquakes, and while significant earthquakes do not regularly occur within the district, moderate earthquakes do occur on an interval of about once every 10 years, with potential for a large 6.0+/- magnitude quake about 1 time every 100 years.

Flood: Localized Stormwater Flooding

Likelihood of Future Occurrence—Occasional

Vulnerability—Medium

Hazard Profile and Problem Description

Flooding occurs in areas other than the FEMA mapped 1% and 0.2% annual chance floodplains. Flooding may be from drainages not studied by FEMA, lack of or inadequate drainage infrastructure, or inadequate maintenance. Localized, stormwater flooding occurs throughout the County during the rainy season from November through April. Prolonged heavy rainfall contributes to a large volume of runoff resulting in high peak flows of moderate duration.

Location and Extent

The AFPD is subject to localized flooding throughout the District. Flood extents are usually measured in areas affected, velocity of flooding, and depths of flooding. Expected flood depths in the District vary by location. Flood durations in the District tend to be short to medium term, or until either the storm drainage system can catch up or flood waters move downstream. Localized flooding in the District tends to have a shorter speed of onset, especially when antecedent rainfall has soaked the ground and reduced its capacity to absorb additional moisture. The most significant ponding of water in the district related to heavy rainfall are low spots or areas that are drained by culverts which tend to plug up with debris.

Past Occurrences

There have been no federal or state disaster declarations in the County due to localized flooding. The District noted that localized flooding past occurrences can be found in the Severe Weather: Heavy Rains and Storms section of this Annex below.

Vulnerability to and Impacts from Localized Flooding

Historically, much of the growth in the District and County has occurred adjacent to streams, resulting in significant damages to property, and losses from disruption of community activities when the streams overflow. Additional development in the watersheds of these streams affects both the frequency and duration of damaging floods through an increase in stormwater runoff.

Primary concerns associated with stormwater flooding include life safety issues, and impacts to property and to infrastructure that provides a means of ingress and egress throughout the community. Ground saturation can result in instability, collapse, or other damage to trees, structures, roadways and other critical infrastructure. Objects can also be buried or destroyed through sediment deposition. Floodwaters can break utility lines and interrupt services. Standing water can cause damage to crops, roads, and foundations. Other problems connected with flooding and stormwater runoff include erosion, sedimentation, degradation of water quality, losses of environmental resources, and certain health hazards.

Heavy rains occur on an annual basis in the Alta FPD service area. Impacts to the area usually include mild flooding and damage to infrastructure roads. The District experiences localized flooding annually. Though a drought was affecting much of California, heavy rains caused mild to moderate damages in the area and increasing hazards on Highway 80, a critical commercial corridor that goes through the District.

Flooding generally has not affected the ability for the fire department to respond to emergencies, but a plugged culvert or ditch could cause issues in a number of locations in the district, such as on Alta Reservoir Rd or Drum Powerhouse Rd.

Assets at Risk

No assets listed in Table F-4 have a general risk of flooding as the assets are all located in generally well drained area, but a blocked culvert or ditch could increase the risk of flooding at all of these facilities, but the likelihood of such an event would be low.

Landslide, Mudslide, Debris Flows

Likelihood of Future Occurrence—Occasional

Vulnerability—Medium

Hazard Profile and Problem Description

According to the California Geological Survey, landslides refer to a wide variety of processes that result in the perceptible downward and outward movement of soil, rock, and vegetation under gravitational influence. Common names for landslide types include slump, rockslide, debris slide, lateral spreading,

debris avalanche, earth flow, and soil creep. Landslides may be triggered by both natural and human-induced changes in the environment that result in slope instability.

The susceptibility of an area to landslides depends on many variables including steepness of slope, type of slope material, structure and physical properties of materials, water content, amount of vegetation, and proximity to areas undergoing rapid erosion or changes caused by human activities. These activities include mining, construction, and changes to surface drainage areas. Landslide events can be determined by the composition of materials and the speed of movement. A rockfall is dry and fast while a debris flow is wet and fast. Regardless of the speed of the slide, the materials within the slide, or the amount of water present in the movement, landslides are a serious natural hazard.

Debris flows can also occur in some areas of the County and the District. These debris flows generally occur in the immediate vicinity of existing drainage swales or steep ravines. Debris flows occur when near surface soil in or near steeply sloping drainage swales becomes saturated during unusually heavy precipitation and begins to flow downslope at a rapid rate. Debris flows are also common during the rainy season in post fire areas.

Location and Extent

Landslides, mudslides, and debris flows can affect certain areas of the District. The CGS has estimated that the risk varies across the District and has created maps showing risk variance. This risk variance falls into multiple categories. These are discussed in Section 4.3.14 of the Base Plan. According to the District Planning Team, risk varies within the District range from low to moderate. The speed of onset of landslide is often short, especially in post-wildfire burn scar areas, but it can also take years for a slope to fail. Landslide duration is usually short, though digging out and repairing landslide areas can take some time.

Past Occurrences

There have been no federal or state disaster declarations in the County from landslide. The District Planning Team noted the following past occurrences:

There have been landslides within the District, historically the E. Towle/W. Towle landslide (no specific dates could be recalled) which removed the historic Town of Towle. Old historic underground mining operations have caused fatal events within the District as well. The combination of large underground spring water sources and abandoned unmapped mining tunnels are common within the District. The combination of large underground spring water sources and abandoned unmapped mining tunnels are common within the District and several collapses resulting in sinkholes have occurred in the last 15 years.

On **February 10, 2017** heavy rains lead to a mudslide and rockslide that closed all lanes of traffic on Interstate 80 in the Alta, CA area. It took CalTrans several days to clean-up the slide and put in temporary barriers and fixes in place until the ground dried up enough to make more permanent fixes. The barriers still exist, but slope stabilization techniques were utilized to reduce but not eliminate the risk of slope failure in this specific location.

Vulnerability to and Impacts from Landslide

Although landslides are primarily associated with slopes greater than 15 percent, they can also occur in relatively flat areas and as cut-and-fill failures, river bluff failures, lateral spreading landslides, collapse of wine-waste piles, failures associated with quarries, and open-pit mines. Landslides may be triggered by both natural- and human-caused activity.

The District has identified several areas prone to landslides. These include the following landslide prone areas:

- Cut slopes for Roadways including Interstate 80
- Portions of the ends of East and West Towle Rd
- Cut and fill slopes for the Railroad

Assets at Risk

All District assets from Table F-4) are at risk from this hazard.

Severe Weather: Extreme Heat

Likelihood of Future Occurrence–Highly Likely

Vulnerability–Medium

Hazard Profile and Problem Description

According to FEMA, extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks. Heat kills by taxing the human body beyond its abilities. In extreme heat and high humidity, evaporation is slowed, and the body must work extra hard to maintain a normal temperature.” Most heat disorders occur because the victim has been overexposed to heat or has over-exercised for his or her age and physical condition. Older adults, young children, and those who are sick or overweight are more likely to succumb to extreme heat.

In addition to the risks faced by citizens of the District, there are risk to the built environment from extreme heat. While extreme heat on its own does not usually affect structure, extreme heat during times of drought can cause wildfire risk to heighten. Extreme heat and high winds can cause power outages and PSPS events, causing issues to buildings in the District.

Extreme Heat and Power Shortage/Power Failure

The US power grid crisscrosses the country, bringing electricity to homes, offices, factories, warehouses, farms, traffic lights and even campgrounds. According to statistics gathered by the Department of Energy, major blackouts are on the upswing. Incredibly, over the past two decades, blackouts impacting at least 50,000 customers have increased 124 percent. The electric power industry does not have a universal agreement for classifying disruptions. Nevertheless, it is important to recognize that different types of outages are possible so that plans may be made to handle them effectively. In addition to blackouts, brownouts can occur. A brownout is an intentional or unintentional drop in voltage in an electrical power supply system. Intentional brownouts are used for load reduction in an emergency. Electric power

disruptions can be generally grouped into two categories: intentional and unintentional. More information on types of power disruptions can be found in Section 4.3.2 of the Base Plan.

Public Safety Power Shutoff (PSPS)

A new intentional disruption type of power shortage/failure event has recently occurred in California. In recent years, several wildfires have started as a result of downed power lines or electrical equipment. This was the case for the Camp Fire in 2018. As a result, California's three largest energy companies (including PG&E), at the direction of the California Public Utilities Commission (CPUC), are coordinating to prepare all Californians for the threat of wildfires and power outages during times of extreme weather. To help protect customers and communities during extreme weather events, electric power may be shut off for public safety in an effort to prevent a wildfire. This is called a PSPS.

More information on PSPS criteria can be found in Section 4.3.2 of the Base Plan.

Location and Extent

Heat is a regional phenomenon and affects the whole of the District. Heat emergencies are often slower to develop, taking several days of continuous, oppressive heat before a significant or quantifiable impact is seen. Heat waves do not strike victims immediately, but rather their cumulative effects slowly affect vulnerable populations and communities. Heat waves do not generally cause damage or elicit the immediate response of floods, fires, earthquakes, or other more "typical" disaster scenarios.

The NWS has in place a system to initiate alert procedures (advisories or warnings) when extreme heat is expected to have a significant impact on public safety. The expected severity of the heat determines whether advisories or warnings are issued. The NWS HeatRisk forecast provides a quick view of heat risk potential over the upcoming seven days. The heat risk is portrayed in a numeric (0-4) and color (green/yellow/orange/red/magenta) scale which is similar in approach to the Air Quality Index (AQI) or the UV Index. This can be seen in Section 4.3.2 of the Base Plan.

Past Occurrences

There has been no federal or state disaster declarations in the County for heat. The District Planning Team noted that since extreme heat is a regional phenomenon, events that affected the County also affected the District. Those past occurrences were shown in the Base Plan in Section 4.3.2.

Generally, extreme heat in the district only occurs for 1-2 weeks per year with temperature in the mid to upper 90's or low 100's. The rest of the summer and fall, the heat is not usually an issue, but the low humidity associated with regional heat waves affecting Western Placer County does have an impact on the dryness of fuels on the western slope of the Sierra Nevada mountains and the Alta Fire Protection District.

Vulnerability to and Impacts from Extreme Heat

The District experiences temperatures in excess of 100°F during the summer and fall months. The temperature moves to 105-110°F in rather extreme situations. During these times, drought conditions may worsen. Also, power outages and PSPS events may occur during these times as well. Health impacts,

including loss of life, are the primary concern with this hazard, though economic impacts are also an issue. Extreme hot weather within the region, accompanies low humidity and increased risk of wildfire ignition and extreme fire behavior. Ignition potential is further increased due to critically low fuel moistures resulting from years of drought.

Days of extreme heat have been known to result in medical emergencies, and unpredictable human behavior. Also vulnerable to the effects of extreme hot weather is the elderly population located within District boundaries. The District contains a significant elderly population, with some residing in homes that have not been sufficiently updated to protect against extreme temperatures. Periods of extended heat and dryness (droughts) can have major economic, agricultural, and water resources impacts. Extreme heat can also dry out vegetations, making it more vulnerable to wildfire ignitions. Wildfires are the most significant heat related risk factors in the Alta Fire Protection District.

Assets at Risk

All assets listed in Table F-4 are at risk from severe heat waves and the related risks of wildfire.

Severe Weather: Freeze and Snow

Likelihood of Future Occurrence–Highly Likely

Vulnerability–Medium

Hazard Profile and Problem Description

According to the NWS and the WRCC, winter snowstorms can include heavy snow, ice, and blizzard conditions. Heavy snow can immobilize a region, stranding commuters, stopping the flow of supplies, and disrupting emergency and medical services. Accumulations of snow can collapse roofs and knock down trees and power lines. In rural areas, homes and farms may be isolated for days, and unprotected livestock may be lost. The cost of snow removal, damage repair, and business losses can have a tremendous impact on cities and towns.

Heavy accumulations of ice can bring down trees, electrical wires, telephone poles and lines, and communication towers. Communications and power can be disrupted for days until the damage can be repaired. Power outages can have a significant impact on communities, especially critical facilities such as public utilities. Even small accumulations of ice may cause extreme hazards to motorists and pedestrians.

Some winter storms are accompanied by strong winds, creating blizzard conditions with blinding wind-driven snow, severe drifting, and dangerous wind chills. Strong winds accompanying these intense storms and cold fronts can knock down trees, utility poles, and power lines. Blowing snow can reduce visibility to only a few feet in areas where there are no trees or buildings. Serious vehicle accidents with injuries and deaths can result. Freezing temperatures can cause significant damage to the agricultural industry.

The District experiences both rain and snow and depending on the specific event and timing, either are equally problematic. About 5 years of every 10 have at least 1 significant rain or snow event with about 3 out of every 10 years having multiple significant or a string of significant heavy rain and/or snow events resulting in localized flooding, road closures and downed trees.

Location and Extent

Freeze and snow are regional issues, meaning the entire District is at risk to cold weather and freeze events. While there is no scale (i.e. Richter, Enhanced Fujita) to measure the effects of freeze, the WRCC reports that in a typical year, minimum temperatures fall below 32°F on 209.0 days with 0.4 days falling below 0°F in eastern Placer County. Snowfall is measured in depths, and the WRCC reports that average snowfall on the eastern side of the County is 190.7 inches. Freeze and snow have a slow onset and can generally be predicted in advance for the County. Freeze events can last for hours (in a cold overnight), or for days to weeks at a time. Snow event can last for hours or days, and the snow stays all winter in the eastern portion of the County, often with significant snow depths. The Alta Fire Protection District generally receives an average precipitation amount of 75-85 inches per year. Some of that precipitation falls as snow and an average snow year is 6-10 feet depending on the elevation in the district (~3500-4500ft). The district received 120 inches of rainfall in 2007-08 and 10-16ft of snow at least twice in the last decade. Blue Canyon, about 5 miles East of the Alta Fire Protection District, receives one of the highest amounts of precipitation in California on an annual basis.

Past Occurrences

There has been no federal and one state disaster declarations in the County for freeze and snow, as shown on Table F-6.

Table F-6 Placer County – State and Federal Disaster Declarations from Freeze and Snow 1950-2020

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Freeze	1	1972	0	–

Source: Cal OES, FEMA

The District noted that cold and freeze is a regional phenomenon; events that affected the County also affected the District. Those past occurrences were shown in the Base Plan in Section 4.3.3. Freeze and snow are an annual occurrence within the District.

Vulnerability to and Impacts from Severe Weather: Freeze and Snow

The District experiences temperatures below 32 degrees during the winter months. Freeze can cause injury or loss of life to residents of the District. While it is rare for buildings to be affected directly by freeze, damages to pipes that feed building can be damaged during periods of extreme cold. Freeze and snow can occasionally be accompanied by high winds, which can cause downed trees and power lines, power outages, accidents, and road closures. Transportation networks, communications, and utilities infrastructure are the most vulnerable physical assets to impacts of severe winter weather in the County.

In the District, this severe weather severely impacts the Highway 80 commercial corridor and compromises resident and emergency responder's ingress and egress. Infrastructure road surface damage and pavement deterioration are also concerns during winter. The elderly and special needs population located within District boundaries also require monitoring during severe weather episodes. The District contains a

significant elderly population, with some residing in homes that have not been sufficiently updated to protect against extreme temperatures.

Assets at Risk

All District assets (from Table F-4) are at risk from this hazard.

Severe Weather: Heavy Rains and Storms

Likelihood of Future Occurrence—Highly Likely

Vulnerability—Medium

Hazard Profile and Problem Description

Storms in the District occur annually and are generally characterized by heavy rain often accompanied by strong winds and sometimes lightning and hail. Approximately 10 percent of the thunderstorms that occur each year in the United States are classified as severe. A thunderstorm is classified as severe when it contains one or more of the following phenomena: hail that is three-quarters of an inch or greater, winds in excess of 50 knots (57.5 mph), or a tornado. Heavy precipitation in the District falls mainly in the fall, winter, and spring months.

Location and Extent

Heavy rain events occur on a regional basis. Rains and storms can occur in any location of the District. All portions of the District are at risk to heavy rains. Most of the severe rains occur during the fall, winter, and spring months. There is no scale by which heavy rains and severe storms are measured. Magnitude of storms is measured often in rainfall and damages. The speed of onset of heavy rains can be short, but accurate weather prediction mechanisms often let the public know of upcoming events. Duration of severe storms in California, Placer County, and the District can range from minutes to hours to days. Information on precipitation extremes can be found in Section 4.3.4 of the Base Plan.

Past Occurrences

There have been past disaster declarations from heavy rains and storms, which were discussed in Past Occurrences of the flood section above. According to historical hazard data, severe weather, including heavy rains and storms, is an annual occurrence in the District. This is the cause of many of the federal disaster declarations related to flooding.

A specific event was recalled by the District. In January of 2018 there was a severe rain events that caused flooding and culvert failures. The biggest impacts were felt at High Risk to Casa Loma Rd – Canyon Creek crossing about ½ mile upstream. The Road was severely eroded and at risk to slide. Temporary fixes such as rip-rap, and temporary road dividers are the permanent fix put in place by Placer County. This road services 100's of residences on Moody Ridge and Casa Loma and is the eastern access point for all these residences. The western access point is on the west end of Mood Ridge Rd and is an old, converted flatbed railroad car which cannot support some fire engines and large equipment. This western bridge is at a moderate risk of being washed out and cannot provide adequate access for fire protection should the eastern

access bridge be washed out. Road closures continued for 6 months for clean-up, design and construction of bridge affecting access for approximately 15 homes and a Sons of Norway camp. Cleanup and bridge construction was said to have been ~3 million USD. Fill that washed down stream was approximately 80ft long x 40ft deep.

Vulnerability to and Impacts from Heavy Rain and Storms

Heavy rain and severe storms are the most frequent type of severe weather occurrences in the District. These events can cause localized flooding. Elongated events, or events that occur during times where the ground is already saturated can cause 1% and 0.2% annual chance flooding. Wind often accompanies these storms and has caused damage in the past. Hail and lightning are rare in the District.

Actual damage associated with the effects of severe weather include impacts to property, critical facilities (such as utilities), and life safety. Heavy rains and storms often result in localized flooding creating significant issues. Roads can become impassable and ground saturation can result in instability, collapse, or other damage to trees, structures, roadways and other critical infrastructure. Floodwaters and downed trees can break utilities and interrupt services.

During periods of heavy rains and storms, power outages can occur. These power outages can affect pumping stations and lift stations that help alleviate flooding.

Assets at Risk

All District assets (from Table F-4) are at risk from this hazard.

Severe Weather: High Winds and Tornadoes

Likelihood of Future Occurrence—Highly Likely

Vulnerability—Medium

Hazard Profile and Problem Description

High winds, as defined by the NWS glossary, are sustained wind speeds of 40 mph or greater lasting for 1 hour or longer, or winds of 58 mph or greater for any duration. High winds can cause significant property and crop damage, threaten public safety, and have adverse economic impacts from business closures and power loss. High winds can also cause PSPS events.

Tornadoes are rotating columns of air marked by a funnel-shaped downward extension of a cumulonimbus cloud whirling at destructive speeds of up to 300 mph, usually accompanying a thunderstorm. Tornadoes form when cool, dry air sits on top of warm, moist air. Tornadoes are the most powerful storms that exist. Tornadoes, though rare, are another severe weather hazard that can affect areas of the Placer County Planning Area, primarily during the rainy season in the late fall, winter, and early spring.

Location and Extent

The entire District is subject to significant, non-tornadic (straight-line), winds. Each area of the County is at risk to high winds. Magnitude of winds is measured often in speed and damages. These events are often part of a heavy rain and storm event, but can occur outside of storms. The speed of onset of winds can be short, but accurate weather prediction mechanisms often let the public know of upcoming events. Duration of winds in California is often short, ranging from minutes to hours. The Beaufort scale is an empirical 12 category scale that relates wind speed to observed conditions at sea or on land. Its full name is the Beaufort Wind Force Scale. The Beaufort Scale was shown in Section 4.3.5 of the Base Plan.

Portions of the County are also located in a special wind hazard region, which is a result of foehn winds. A foehn wind is a type of dry down-slope wind that occurs in the lee (downwind side) of a mountain range. Winds of this type are called "snow-eaters" for their ability to make snow melt or sublimate rapidly. This snow-removing ability is caused not only by warmer temperatures, but also the low relative humidity of the air mass coming over the mountain(s). They are also associated with the rapid spread of wildfires, making some regions which experience these winds particularly fire prone.

Tornadoes, while rare, can occur at any location in the County and District. Prior to February 1, 2007, tornado intensity was measured by the Fujita (F) scale. This scale was revised and is now the Enhanced Fujita scale. Both scales are sets of wind estimates (not measurements) based on damage. The new scale (EF) provides more damage indicators (28) and associated degrees of damage, allowing for more detailed analysis and better correlation between damage and wind speed. It is also more precise because it considers the materials affected and the construction of structures damaged by a tornado. The F Scale and EF Scale are shown in Section 4.3.5 of the Base Plan.

Past Occurrences

There has been no federal or state disaster declarations in the County for winds and tornadoes. The District noted that since high winds is a regional phenomenon, events that affected the middle elevations of the County also affected the District. Those past occurrences were shown in the Base Plan in Section 4.3.5.

Vulnerability to and Impacts from Severe Weather: Wind and Tornado

High winds are common occurrences in the District throughout the entire year. Straight line winds are primarily a public safety and economic concern. Windstorm can cause damage to structures and power lines which in turn can create hazardous conditions for people. Debris flying from high wind events can shatter windows in structures and vehicles and can harm people that are not adequately sheltered. High winds can impact critical facilities and infrastructure and can lead to power outages. Wind can also drive wildfire flames, spreading wildfires quickly. During periods of high winds and dry vegetation, wildfire risk increases. High winds that occur during periods of extreme heat can cause PSPS events to be declared in the County.

Impacts from high winds in the District will vary. Future losses from straight line winds include:

- Downed trees
- Power line impacts and economic losses from power outages

- Increased PSPS events
- Occasional building damage, primarily to roofs

In the District, wind and heavy rain events will bring trees down, and occasionally onto homes. This severe weather severely impacts the Highway 80 commercial corridor and compromises resident and emergency responder's ingress and egress. Infrastructure road surface damage and pavement deterioration are also concerns during winter. The elderly and special needs population located within District boundaries also require monitoring during severe weather episodes. The District contains a significant elderly population, with some residing in homes that have not been sufficiently updated to protect against extreme weather events.

Assets at Risk

All District assets (from Table F-4) will be at risk from issues related to heavy winds resulting in downed trees landing on structures and power lines.

Tree Mortality

Likelihood of Future Occurrence—Highly Likely

Vulnerability—High

Hazard Profile and Problem Description

One of the many vulnerabilities of drought in Placer County is the increased risk of widespread tree mortality events that pose hazards to people, homes, and community infrastructure, create a regional economic burden to mitigate, and contribute to future fuel loads in forests surrounding communities. During extended drought, tree mortality is driven by a build-up in endemic bark beetle populations and exacerbated by latent populations of a suite of native insects and disease. Non-native forest pests (insects and/or pathogens) can also contribute to tree mortality events.

Location and Extent

Onset of tree mortality events can be relatively fast; however conditions – such as high stand densities – that lead to tree mortality accumulate slowly over time. Duration of tree mortality is lengthy, as once the tree dies, it remains in place until removed by human activity, wildfire, or breakdown of the wood by nature. Many areas in Placer County have seen increases in tree mortality. The County has mapped these areas, and that map was shown in Section 4.3.18 of the Base Plan. Using a color legend, the map provided by CAL FIRE shows a scale of:

- Deep burgundy depicting areas with more than 40 dead trees per acre
- Red depicting 15 - 40 dead trees per acre
- Orange depicting 5 -15 dead trees per acre
- Yellow depicting 5 or less dead trees per acre

In the past decade, mortality has increased in the eastern portion of Placer County. During the 2012-2018 drought, the state of California Tree Mortality Task force designated multiple Tier 1 and Tier 2 High Hazard Zones where tree mortality posed an elevated risk to human health, properties, and resource values. A

number of Placer County areas were designated during this event and the majority of Placer County watersheds were designated as Tier 2 high hazard zones because of the significant levels of tree mortality, along with numerous Tier 1 High hazard “hot spots”. A map of these areas was shown in in Section 4.3.18 of the Base Plan.

Past Occurrences

There have been no state or federal disasters in the County related directly to tree mortality, though it has most likely contributed to the intensity of past wildfires in the County. Those events are shown in the Past Occurrences section of Wildfire below. In 2015, then-Governor Edmund G. Brown Jr. proclaimed a state of emergency due to the extreme hazard of the dead and dying trees. Following the proclamation, 10 counties were determined to be most affected, which included Placer County. Placer County proclaimed a local emergency due to tree mortality conditions on Dec. 8, 2015.

There is not significant tree mortality within the district at this time. Most of the tree mortality in the district has been small stands of trees and less than an acre for each occurrence. The largest known incident within the district is on the East side of Lake Alta and is approximately about an acre in size. Just west of Lake Alta, the Frost Hill subdivision experienced about a 20-40 acre area of nearly 100% tree mortality related to the Bark Beetle.

Vulnerability to and Impacts from Tree Mortality

Placer County is unique in that many residential and business areas of the community are in the wildland urban interface/intermix with the forest. Trees in these interface/intermix areas are particularly vulnerable to insect and/or drought driven mortality because of the additional stressors that urban environments impose on trees (i.e. soil compaction, altered hydrology, physical damage, heat islands etc.). This exacerbates the occurrence of tree mortality within the populated settings of the County.

. Recent years of drought stress have resulted in high mortality levels, leaving the forest susceptible to disease and insect infestation. As a result of recent drought conditions throughout California, infestations of the Pine Beetle are on the rise and pockets of mortality are rapidly spreading. Several areas within the District forests show signs of Pine Beetle and thus will become more vulnerable to wildfire.

Dead trees are a hazard to the general public and forest visitors, but the risk of injury, death, property damage or infrastructure damages varies depending how the hazard interacts with potential targets. Dead trees within the wildland urban intermix or wildland urban interface or urban areas therefore pose a greater risk to due to their proximity to residents, businesses, and road, power, and communication infrastructure.

Dead trees may fall or deteriorate in their entirety or in part – either mechanism has the potential for injury, death, or inflicting severe damage to targets. As the time since tree mortality increases, so does the deterioration of wood and the potential for tree failure.

Impact to the District directly related to Bark Beetle related tree mortality is increased wildfire risk from the fuel loads.

Assets at Risk

All assets listed in Table F-4 will be at risk from increased wildfire behaviors.

Wildfire

Likelihood of Future Occurrence–Highly Likely

Vulnerability–Extremely High

Hazard Profile and Problem Description

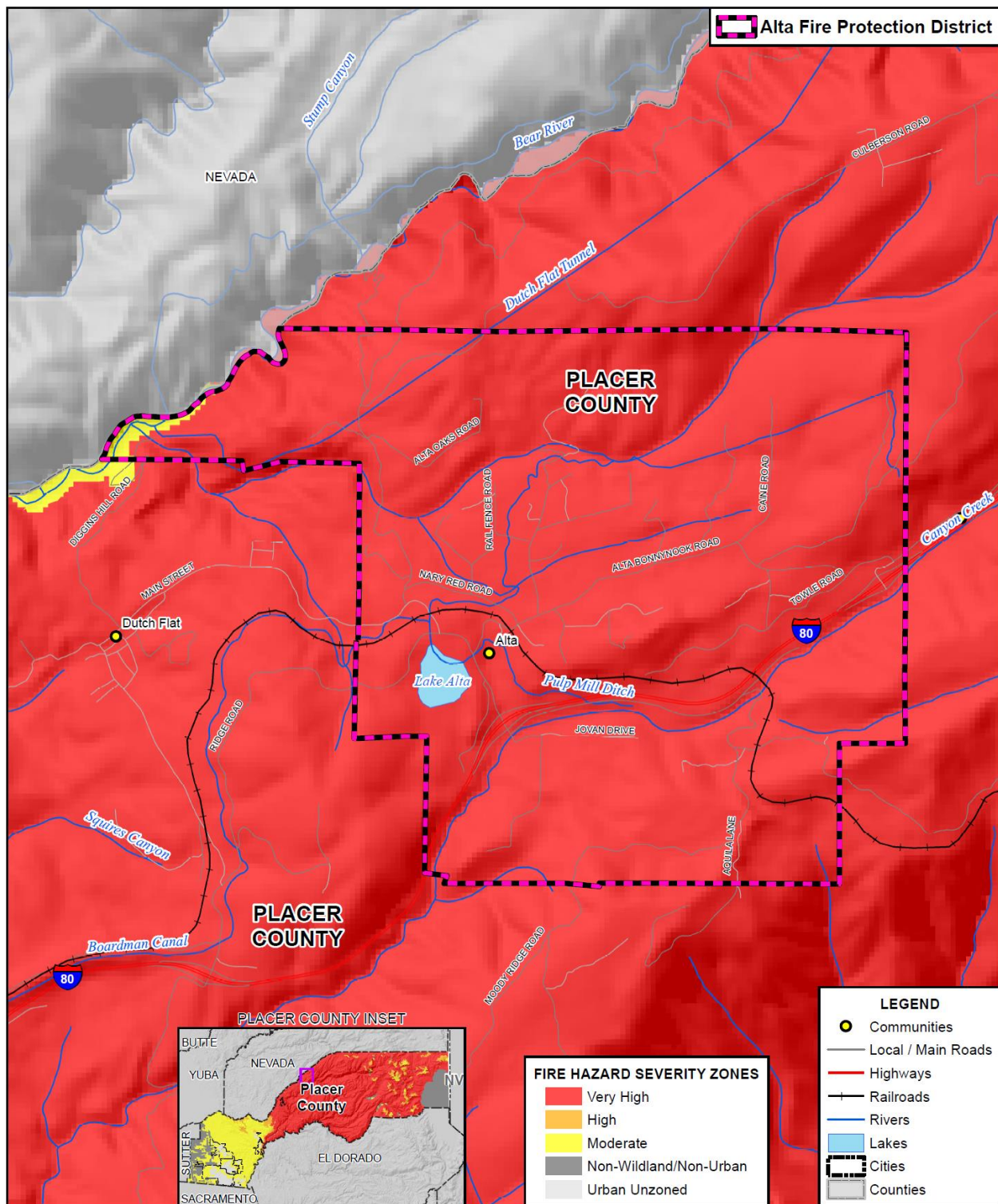
Wildland fire and the risk of a conflagration is an ongoing concern for the AFPD. Throughout California, communities are increasingly concerned about wildfire safety as increased development in the foothills and mountain areas and subsequent fire control practices have affected the natural cycle of the ecosystem. Wildland fires affect grass, forest, and brushlands, as well as any structures located within them. Where there is human access to wildland areas the risk of fire increases due to a greater chance for human carelessness and historical fire management practices. Historically, the fire season extends from early spring through late fall of each year during the hotter, dryer months; however, in recent years, the risk of wildfire has become a year around concern. Fire conditions arise from a combination of high temperatures, low moisture content in the air and fuel, accumulation of vegetation, and high winds. While wildfire risk has predominantly been associated with more remote forested areas and wildland urban interface (WUI) areas, significant wildfires can also occur in more populated, urban areas.

All of the communities that the Alta FPD is responsible for or provide mutual aid to are listed on the National Fire Plan’s “Communities at Risk” list. These include the communities of Alta, Dutch Flat, Casa Loma, Emigrant Gap, and Gold Run.

Location and Extent

Wildfire can affect all areas of the District. CAL FIRE has estimated that the risk varies across the District and has created maps showing risk variance. Following the methodology described in Section 4.3.19 of the Base Plan, wildfire maps for the AFPD were created. Figure F-2 shows the CAL FIRE FHSZ in the District. As shown on the maps, FHSZs within the District range from Moderate to Very High.

Figure F-2 AFPD – Fire Hazard Severity Zones



Wildfires tend to be measured in structure damages, injuries, and loss of life as well as on acres burned. Fires can have a quick speed of onset, especially during periods of drought or during hot dry summer months. Fires can burn for a short period of time, or may have durations lasting for a week or more.

Past Occurrences

There has been five state and six federal disaster declarations for Placer County from fire. These can be seen in Table F-7.

Table F-7 Placer County – State and Federal Disaster Declarations Summary 1950-2020

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Fire	5	1961, 1965, 1973, 1987, 2010	6	2002, 2004, 2008, 2009, 2014 (twice)

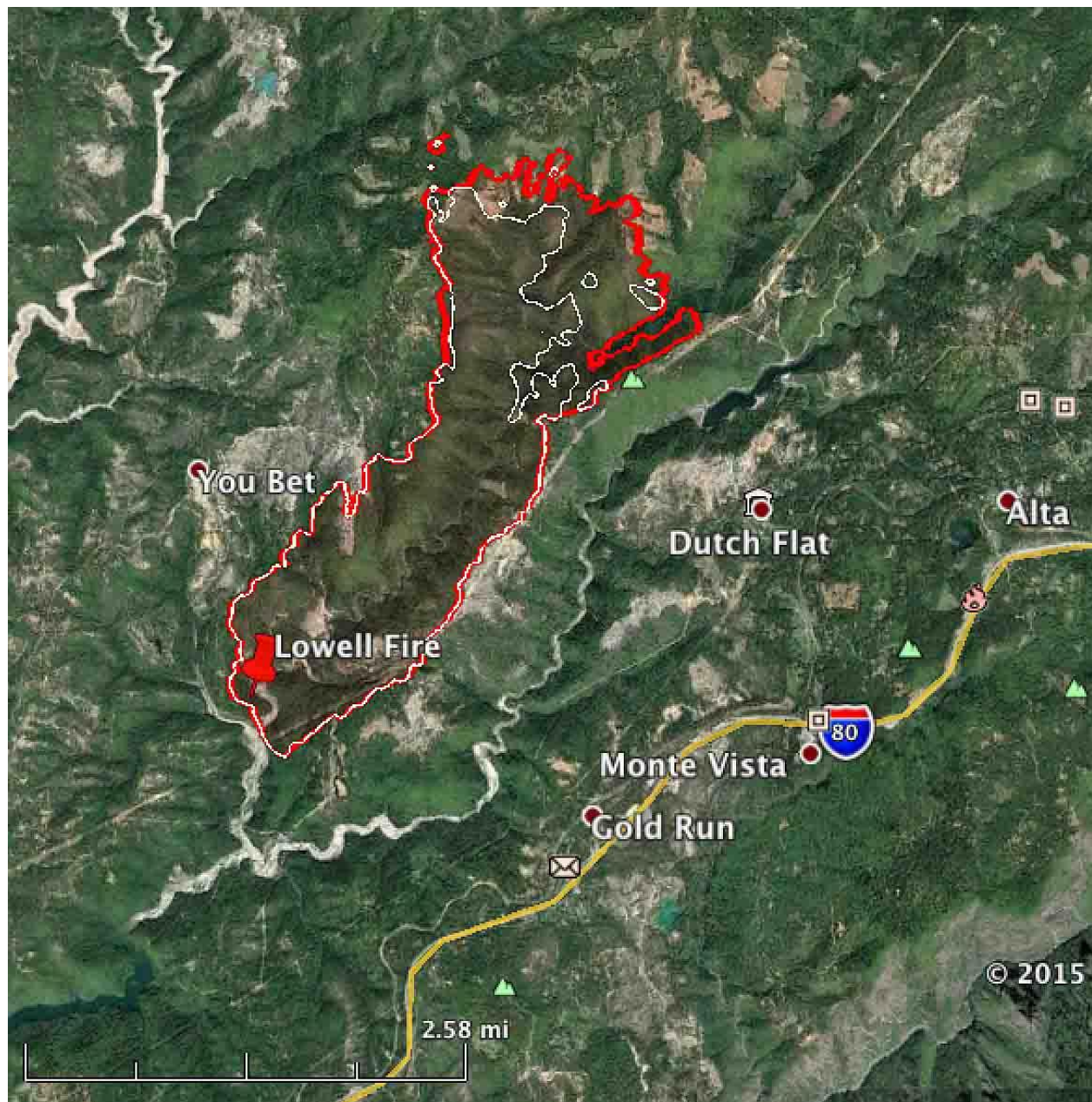
Source: Cal OES, FEMA

The District noted it was affected by the following wildfires:

June 2008 Government Springs Fire (part of the American River Complex Fire) – The American River Complex started during the June 21 lightning storm as a series of 9 fires within the American River drainage area in Placer County. While 5 fires were contained within 24 hours, four fires threatened the communities of Foresthill, Baker Ranch and Michigan Bluff. With moderate to rapid fire spread, the Peavine Fire was expected to double in size while the Government Springs Fire was expected to triple in size. The Westville Fire eventually merged with the Government Springs Fire. Smoke created health issues affecting the community of Foresthill. The fires burned for over five weeks and charred over 20,000 acres and cost over \$23 million to fight. 2 residential structures were destroyed; no fatalities occurred.

July 2015 Alta Lowell Fire – Dry vegetation, low humidity and high temperature caused a fire to start on Lowell Hill Rd just on the other side of the Bear River from Alta, CA. The fire burned approximately 4,000 acres and destroyed one structure. At least 4 injuries (2 CalFire and 2 US Forest Service employees). Roads were closed for safety. Mandatory evacuations were in effect for Red Dog Road East of Greenhorn Creek, You Bet Road East of Greenhorn Creek, Chalk Bluff, and Lowell Hill Roads. An evacuation advisory was in place for the Cascade Shores Community. While no fires or spot fires related these incidents occurred in the District, the Alta Fire Protection District did provide support in the form of equipment and staff to help in firefighting efforts.

Figure F-3 Alta Lowell Fire Perimeter



Source: Wildfire Today article - <https://wildfiretoday.com/2015/07/25/california-lowell-fire-causing-evacuations-east-of-grass-valley/> retrieved on 3/29/2021.

Vulnerability to and Impacts from Wildfire

Risk and vulnerability to the Placer County Planning Area and the District from wildfire is of significant concern, with some areas of the Planning Area being at greater risk than others as described further in this section. High fuel loads in the Planning Area, combined with a large built environment and population, create the potential for both natural and human-caused fires that can result in loss of life and property. These factors, combined with natural weather conditions common to the area, including periods of drought, high temperatures, low relative humidity, and periodic winds, can result in frequent and potentially

catastrophic fires. During the nearly year around fire season, the dry vegetation and hot and sometimes windy weather results in an increase in the number of ignitions. Any fire, once ignited, has the potential to quickly become a large, out-of-control fire. As development continues throughout the County and the District, especially in these interface areas, the risk and vulnerability to wildfires will likely increase.

Potential impacts from wildfire include loss of life and injuries; damage to structures and other improvements, natural and cultural resources, croplands, and loss of recreational opportunities. Wildfires can cause short-term and long-term disruption to the District. Fires can have devastating effects on watersheds through loss of vegetation and soil erosion, which may impact the District by changing runoff patterns, increasing sedimentation, reducing natural and reservoir water storage capacity, and degrading water quality. Fires can also affect air quality in the District; smoke and air pollution from wildfires can be a severe health hazard.

Although the physical damages and casualties arising from large fires may be severe, it is important to recognize that they also cause significant economic impacts by resulting in a loss of function of buildings and infrastructure. Economic impacts of loss of transportation and utility services may include traffic delays/detours from road and bridge closures and loss of electric power, potable water, and wastewater services. Schools and businesses can be forced to close for extended periods of time. Recently, the threat of wildfire, combined with the potential for high winds, heat, and low humidity, has caused PG&E to initiate PSPSs which can also significantly impact a community through loss of services, business closures, and other impacts associated with loss of power for an extended period. In addition, catastrophic wildfire can create favorable conditions for other hazards such as flooding, landslides, and erosion during the rainy season.

The District has experienced direct wildfire threat annually, often deriving from the North Fork of the American River canyon, which experiences heavy recreational usage. The landscape along this canyon is densely vegetated and exists in a mixed mosaic of ownerships which makes landscape scale fuel reduction difficult. The District is also intersected by Highway 80 and the Union Pacific railroad, both of which increase the probability of roadside, railway ignition sources. The most recent threat to the community of Alta was the 2015 Lowell fire that burned 2,304 acres of forestland. The District is actively working with the community to install shaded fuel breaks in strategic locations.

Assets at Risk

As shown on the map in Figure F-2, all District assets from Table F-4 are at risk to wildfire.

F.6 Capability Assessment

Capabilities are the programs and policies currently in use to reduce hazard impacts or that could be used to implement hazard mitigation activities. This capabilities assessment is divided into five sections: regulatory mitigation capabilities, administrative and technical mitigation capabilities, fiscal mitigation capabilities, mitigation education, outreach, and partnerships, and other mitigation efforts.

F.6.1. Regulatory Mitigation Capabilities

Table F-8 lists regulatory mitigation capabilities, including planning and land management tools, typically used by local jurisdictions to implement hazard mitigation activities and indicates those that are in place in the AFPD.

Table F-8 AFPD Regulatory Mitigation Capabilities

Plans	Y/N Year	Does the plan/program address hazards? Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan/General Plan	N/A	N/A
Capital Improvements Plan	N	N/A
Economic Development Plan	N/A	N/A
Local Emergency Operations Plan	Y / Ongoing	Alta Fire Protection District's Community Center is a certified evacuation center with FEMA, is an alternate evacuation location for the Alta Dutch Flat Elementary School and a Community Resource Center utilized by PG&E during PSPS events for residents of the Alta Fire Protection District and surrounding communities.
Continuity of Operations Plan	Y / Ongoing	A mutual aid agreement with Placer County Fire / Cal Fire provides continuity of service for fire and life safety in the Alta Fire Protection District
Transportation Plan	N/A	N/A
Stormwater Management Plan/Program	N/A	N/A
Engineering Studies for Streams	N/A	N/A
Community Wildfire Protection Plan	Y / 2012	Western Placer Community Wildfire Protection Plan. Yes, the plan identifies hazards and contains a list of mitigation projects that is reviewed annually.
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)	N	N
Building Code, Permitting, and Inspections	Y/N	Are codes adequately enforced?
Building Code	Y	Enforced by Placer County
Building Code Effectiveness Grading Schedule (BCEGS) Score	N	Score:
Fire department ISO rating:	Y	Rating: 6Y
Site plan review requirements	N	
Land Use Planning and Ordinances	Y/N	Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?
Zoning ordinance	N/A	Responsibility of Placer County
Subdivision ordinance	N/A	Responsibility of Placer County

Floodplain ordinance	N/A	Responsibility of Placer County
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	N/A	Responsibility of Placer County
Flood insurance rate maps	N/A	Responsibility of Placer County
Elevation Certificates	N/A	Responsibility of Placer County
Acquisition of land for open space and public recreation uses	N/A	Responsibility of Placer County
Erosion or sediment control program	N/A	Responsibility of Placer County
Hazardous Fuel Abatement program	Y	Responsibility of Placer County
How can these capabilities be expanded and improved to reduce risk?		
The hazardous fuel abatement program adopted by Placer County is designed to give Alta Fire Protection District residents, who are required to meet the CalFire guidelines for Defensible Space an avenue to get non-conforming properties who fail to meet those standards a way of getting the property owners of those properties to clear vegetation required for the 100ft defensible space program. It has not been determined if the program has yet to be effective.		

Source: AFD

The residents within the Alta Fire Protection District have worked to create a Firewise Community over the last 2 years and part of that process work on fuels reduction for properties in the District. The CWPP is managed by the Placer County Fire Safe Council, and a number of shaded fuel breaks have been created in and around the Alta Fire Protection District.

F.6.2. Administrative/Technical Mitigation Capabilities

Table F-9 identifies the District department(s) responsible for activities related to mitigation and loss prevention in AFD.

Table F-9 AFD's Administrative and Technical Mitigation Capabilities

Administration	Y/N	Describe capability Is coordination effective?
Planning Commission	Y	In coordination with Placer County
Mitigation Planning Committee	N	
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	N	
Mutual aid agreements	Y	Coordination has been effective and a permanent long term solution is in process for the District to ensure 24/7 coverage for Emergency Services
Other		
Staff	Y/N FT/PT	Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?
Chief Building Official	Y	In coordination with Placer County
Floodplain Administrator	N	
Emergency Manager	Y	In coordination with Placer County

Community Planner	N	
Civil Engineer	Y	In coordination with Placer County
GIS Coordinator	Y	In coordination with Placer County
Other		
Technical		
Warning systems/services (Reverse 911, outdoor warning signals)	Y	In coordination with Placer County
Hazard data and information	Y	In coordination with Placer County
Grant writing	Y	In coordination with Placer County
Hazus analysis	Y	Placer County GIS personnel.
Other		
How can these capabilities be expanded and improved to reduce risk?		
A formal agreement with Placer County Fire and CalFire to ensure continuity of services while maintaining and evacuation/community center and continuity of emergency services in coordination with a trained volunteer support role. This is in process and should be complete and in place by the end of 2022.		

Source: AFD

F.6.3. Fiscal Mitigation Capabilities

Table F-10 identifies financial tools or resources that the District could potentially use to help fund mitigation activities.

Table F-10 AFD's Fiscal Mitigation Capabilities

Funding Resource	Access/ Eligibility (Y/N)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding	N	N, N
Authority to levy taxes for specific purposes	N	N, N
Fees for water, sewer, gas, or electric services	N	N, N
Impact fees for new development	N	N, N
Storm water utility fee	N	N, N
Incur debt through general obligation bonds and/or special tax bonds	Y	Y (construction of existing fire department building) Not likely
Incur debt through private activities	N	N, N
Community Development Block Grant	N	N, N
Other federal funding programs	N	N, N
State funding programs	N	N, N
Other	Y	Local community fundraising Can be used in the future, with minimal income expected
How can these capabilities be expanded and improved to reduce risk?		

Funding Resource	Access/ Eligibility (Y/N)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Volunteers have been a key role in providing man hours for fundraisers, but even so, the amount of fundraising in a good year is less than \$10,000. There is not the population needed in the district to pull in more than 2,000-3,000 in an average year, funds need to be from outside sources. The process required for the district to implement fire fees for construction is not cost effective as a study of the fee structure must be audited every 5-10 years and the cost of the audit far exceeds any potential income to district given that most of the district is already at full build-out with only a few remaining vacant parcels still available for new construction.		

Source: AFD

F.6.4. Mitigation Education, Outreach, and Partnerships

Table F-11 identifies education and outreach programs and methods already in place that could be/or are used to implement mitigation activities and communicate hazard-related information.

Table F-11 AFD's Mitigation Education, Outreach, and Partnerships

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Y	Alta Fire Wise Community partnership Yes, this partnership could help implement mitigation activities.
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	N	
Natural disaster or safety related school programs	Y	School programs are in place to teach wildfire protection plans and evacuations for students
StormReady certification	N	
Firewise Communities certification	Y	Process has been started in multiple AFD communities and for the district as a whole and is in progress
Public-private partnership initiatives addressing disaster-related issues	N	Agreement currently in place with PG&E for a community resource center during PSPS events
Other	Y	Inland waters hazmat trailer funded by Grant
How can these capabilities be expanded and improved to reduce risk?		
The District's agreement with PG&E for a community resource center helps to keep residents informed about PSPS related events. The establishment of an Alta Fire Wise Community is an educational and functional resource for residents to stay informed about how to create and maintain defensible space and where to go for assistance for the elderly and low-income residents.		

Source: AFD

The Alta FPD has automatic aid agreements with bordering Districts and mutual aid agreements with other fire agencies throughout the area. The District relies heavily upon this aid from neighbors.

The District also works with other agencies on wildfire-related matters. Working with professional fire experts from the U.S. Forest Service and California Department of Forestry and Fire Protection helps ensure that the District's work complements state and federal work and is up to standard for controlling wildfires.

F.6.5. Other Mitigation Efforts

The District is involved in a variety of mitigation activities including public education, fuels management projects, and other activities to reduce fuel loads and fire risk. These mitigation activities include:

- **Public Education and Fire Safety**
 - ✓ A variety of public outreach activities are conducted throughout the district on an annual basis.
 - ✓ The District maintain an active educational presence in the community and the Alta – Dutch Flat School
 - ✓ The District also coordinates the use of the County Chipper for local fuel reduction activities.
- **Fuels Management Activities.**
 - ✓ The District has been partnering with Cal Fire and PG&E to actively pursue fuel reduction opportunities. Several miles of shaded fuel break and roadside shaded fuel break have been recently installed and efforts to extend these breaks continue.
 - ✓ The District has worked together with Cal Fire, the Placer County RCD and the USFS to plan and develop strategic fuel breaks that will protect the community. Federal, State and Private Grants continue to support the planning and implementation.
 - ✓ Cooperation between Caltrans and Cal Fire is resulting in fuels reduction work and demonstration of proper fuels reduction implementation.
- **Defensible Space**
 - ✓ In recent years due to lack of funding, the district has limited involvement in the enforcement of the defensible space program. When funding has been available, the District provides annual defensible space inspections of area residents.
 - ✓ The District currently operates an elderly assistance program where they coordinate volunteers to clear properties. This is now managed by the Sierra First Baptist Church who has connections with the elderly and disadvantaged members of the community.
- **Community Response**
 - ✓ The District's CERT team has disbanded due to loss of interest. The trained individuals were not utilized by Emergency Services on incidents outside the district, and the small call volume within the district meant the CERT Team members were exclusively training for events that did not occur or for which they were not called upon by Placer County.
 - ✓ The community has worked to create a Fire Wise Community which is working on educating the public on fire prevention and defensible space management.

F.7 Mitigation Strategy

F.7.1. Mitigation Goals and Objectives

The AFPD adopts the hazard mitigation goals and objectives developed by the HMPC and described in Chapter 5 Mitigation Strategy.

F.7.2. Mitigation Actions

The planning team for the AFPD identified and prioritized the following mitigation actions based on the risk assessment. Background information and information on how each action will be implemented and administered, such as ideas for implementation, responsible office, potential funding, estimated cost, and timeline are also included. The following hazards were considered a priority for purposes of mitigation action planning:

- Climate Change
- Drought & Water Shortage
- Earthquake
- Floods: Localized Stormwater
- Landslides, Mudslides, and Debris Flows
- Severe Weather: Extreme Heat
- Severe Weather: Freeze and Snow
- Severe Weather: Heavy Rains and Storms
- Severe Weather: High Winds and Tornadoes
- Tree Mortality
- Wildfire

It should be noted that many of the projects submitted by each jurisdiction in Table 5-4 in the Base Plan benefit all jurisdictions whether or not they are the lead agency. Further, many of these mitigation efforts are collaborative efforts among multiple local, state, and federal agencies. In addition, the countywide public outreach action, as well as many of the emergency services actions, apply to all hazards regardless of hazard priority. Collectively, this multi-jurisdictional mitigation strategy includes only those actions and projects which reflect the actual priorities and capacity of each jurisdiction to implement over the next 5-years covered by this plan. It should further be noted, that although a jurisdiction may not have specific projects identified for each priority hazard for the five year coverage of this planning process, each jurisdiction has focused on identifying those projects which are realistic and reasonable for them to implement and would like to preserve their hazard priorities should future projects be identified where the implementing jurisdiction has the future capacity to implement.

Multi-Hazard Actions

Action 1. Reflective Addressing

Hazards Addressed: Multi-Hazard (Climate Change, Drought & Water Shortage, Earthquake, Floods: Localized Stormwater, Landslides, Mudslides, and Debris Flows, Severe Weather: Extreme Heat, Severe

Weather: Freeze and Snow, Severe Weather: Heavy Rains and Storms, Severe Weather: High Winds and Tornadoes, Tree Mortality, and Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: In the Alta Community many residences have long driveways or are down private roads in which the addresses are not well marked making it difficult for emergency responders to locate the location of an emergency.

Project Description: Provide an educational resource to residents of the importance of clearly and properly marking their address such that it is easily visible from the street and to provide address signs for purchase at low cost to the residents of the community.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: Education at community events and/or by educational brochures and flyers located in public places in the community

Responsible Agency/ Department/Partners: Alta Fire Protection District / Alta Fire Wise Community

Cost Estimate: Less than \$50/property

Benefits (Losses Avoided): Decreased emergency response times for residents which generally leads to better medical aide and reduced property damages from fires.

Potential Funding: Grant, County and Private funding sources

Timeline: Ongoing

Project Priority (H, M, L): H

Action 2. Alta FireWise Community Established and Continuing

Hazards Addressed: Wildfire hazards

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Many residents in the community believe they have created defensible space but are unaware of many fire hazards that still exist to their property and that put their homes and/or their neighbors' homes at risk during a wildfire.

Project Description: Provide an educational resource to residents of the importance of properly creating defensible space for their homes and to educate them about their responsibility and requirements by law for them to ensure their neighbors are also able to meet the defensible space requirements. Provide a resource to help the elderly and disabled to create defensible space and to coordinate community projects for creating defensible space in public spaces such as the school, church and along roadways that are evacuation routes.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: Education at community events and/or by educational brochures and flyers located in public places in the community

Responsible Agency/ Department/Partners: Alta Fire Protection District / Alta Fire Wise Community

Cost Estimate: Unknown

Benefits (Losses Avoided): Decrease the number acres burned and homes lost during wildfires in the community.

Potential Funding: Grant, County and Private funding sources

Timeline: Ongoing

Project Priority (H, M, L): H

Action 3. *Apparatus Water Fill & Drafting Location Improvements*

Hazards Addressed: Wildfire, Drought and Water Shortage, Climate Change

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Wildland and occasionally a structure fire requires an engine or water tender to travel as much as an hour round trip, plus time to refill the tanks. There are many locations where canals or lakes are much closer to the fire than a hydrant, but access to many of these locations is less than ideal for apparatus to access the canal or water source. In many of these locations, minor and low-cost alterations to a gate, access ramp or turnaround would allow an engine or water tender refill much closer to the fire location.

Project Description: Identify the potential sites along the I80 corridor between Colfax and Hwy 20 where minor or low-cost upgrades would allow for fire apparatus to draft water. Work with the agency that operates the water source for design and build of the upgrade.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: No existing mechanism.

Responsible Agency/ Department/Partners: Placer County Fire / CalFire / Alta Fire Protection District / Placer County Water Agency / Nevada Irrigation District / PG&E

Cost Estimate: Unknown

Benefits (Losses Avoided): Reduction in burned acreages from wildfires and reduced damage from structural fires

Potential Funding: Operating agencies, partners, grants and other unknown sources

Timeline: 2-5 years

Project Priority (H, M, L): M

Action 4. *Emergency Communications and Information System Improvements (HAM Radio and GMRS communications)*

Hazards Addressed: Multi-Hazard (Climate Change, Drought & Water Shortage, Earthquake, Floods: Localized Stormwater, Landslides, Mudslides, and Debris Flows, Severe Weather: Extreme Heat, Severe Weather: Freeze and Snow, Severe Weather: Heavy Rains and Storms, Severe Weather: High Winds and Tornadoes, Tree Mortality, and Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: The topography in the mountain communities along the Interstate 80 corridor are such that communications via radio can be difficult. Radio signals generally require line of sight from the communications device to the communications tower/repeater. More tower/repeater locations or upgrades to existing tower/repeater locations can greatly improve the ability for emergency responders to communicate with mobile communication devices.

Project Description: Identify and build or upgrade communication sites to improve mobile communications for communities along the Interstate 80 corridor from Colfax to Highway 20.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: Unknown

Responsible Agency/ Department/Partners: Alta Fire Protection District / Fire Wise communities / Placer County / CalFire

Cost Estimate: Unknown

Benefits (Losses Avoided): Increased mobile communications ability will increase the resources needed by emergency responders to request additional resources and provide for a safer work environment.

Potential Funding: Grant, County and Private funding sources

Timeline: Ongoing

Project Priority (H, M, L): H

Action 5. *Evacuation / Reunification Center Improvements*

Hazards Addressed: Multi-Hazard (Climate Change, Drought & Water Shortage, Earthquake, Floods: Localized Stormwater, Landslides, Mudslides, and Debris Flows, Severe Weather: Extreme Heat, Severe

Weather: Freeze and Snow, Severe Weather: Heavy Rains and Storms, Severe Weather: High Winds and Tornadoes, Tree Mortality, and Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Having a large safe gathering location where information meetings and booths can be setup and where the students from the school can go off site if needed for emergency requiring an evacuation and/or a reunification process with family. The facility needed to have separate locations for parents and students for the reunification process, and the facility needed to have restrooms, kitchen and climate control (heat/ac).

Project Description: The Community center now has Heat/AC and during PSPS events a generator provided by PG&E. The project now is to determine what additional modifications and/or upgrades are needed and to find funding sources to cover the cost of the upgrades

Other Alternatives: None

Existing Planning Mechanism(s) through which Action Will Be Implemented: Unknown

Responsible Agency/ Department/Partners: Alta Fire Protection District

Cost Estimate: Unknown

Benefits (Losses Avoided): Providing a safe and comfortable location for students and residents to congregate during emergencies

Potential Funding: Grant, County and Private funding sources

Timeline: Ongoing

Project Priority (H, M, L): M

Action 6. Home Hardening Education and Projects

Hazards Addressed: Wildfire hazards to homes and structures

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Many residents in the community believe that by reducing vegetation and creating defensible space are unaware of many fire hazards that still exist to their homes and that put their homes and/or their neighbors' homes at risk during a wildfire.

Project Description: Provide an educational resource to residents of the importance of properly hardening their homes against fire in addition to creating defensible space for their homes and to educate them about their responsibility and requirements by law for them to ensure their neighbors are also able to meet the defensible space requirements. Provide a resource to help the elderly and disabled to better prepare their homes for wildfire by helping harden their homes and create defensible space; to coordinate community

projects for hardening structures in public spaces such as the school, church and along roadways that are evacuation routes.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: Education at community events and/or by educational brochures and flyers located in public places in the community

Responsible Agency/ Department/Partners: Alta Fire Protection District / Alta Fire Wise Community

Cost Estimate: Unknown

Benefits (Losses Avoided): Decrease the number acres burned and homes lost during wildfires in the community.

Potential Funding: Grant, County and Private funding sources

Timeline: Ongoing

Project Priority (H, M, L): H

Action 7. Natural Systems Protection / Community Fuel Breaks

Hazards Addressed: Wildfire, Drought and Water Shortage, Extreme Heat

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: The poor forest management over the last 50 years has resulted in unnatural and excessive fuel loads for all fuel types. The topography also contributes to the speed at which fires spread.

Project Description: Creating fire breaks and shaded fuel breaks along natural fire barriers (i.e. Ridgetops, Rivers, lightly vegetated rocky slopes) to help slow the progression of wildfires.

Other Alternatives: Proper forest management to thin out the forest in its entirety.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Managed by Placer County Fire and CalFire fuel reduction programs

Responsible Agency/ Department/Partners: Placer County / CalFire

Cost Estimate: To be determined

Benefits (Losses Avoided): Providing fuel breaks and shaded fuel breaks to allow firefighters more time to fight wildfires and reduce the required to create fire containment lines.

Potential Funding: Grant, County and Private funding sources

Timeline: Ongoing

Project Priority (H, M, L): H

Action 8. *Natural Systems Protection / Education and Awareness Programs*

Hazards Addressed: Multi-Hazard (Climate Change, Drought & Water Shortage, Earthquake, Floods: Localized Stormwater, Landslides, Mudslides, and Debris Flows, Severe Weather: Extreme Heat, Severe Weather: Freeze and Snow, Severe Weather: Heavy Rains and Storms, Severe Weather: High Winds and Tornadoes, Tree Mortality, and Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: The poor forest management over the last 50 years has resulted in unnatural and excessive fuel loads for all fuel types resulting in larger and more severe fire behavior that does more damage to the forest than fires historically used to do.

Project Description: Educate residents about thinning their properties to create defensible space and help protect the forest on a larger scale.

Other Alternatives: Proper forest management to thin out the forest in its entirety.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Placer County Firesafe Council, Fire Wise Community programs, Placer County Outreach, CalFire Outreach

Responsible Agency/ Department/Partners: Placer County / CalFire / Alta Fire Wise Community / Placer County Fire Safe Council

Cost Estimate: Unknown

Benefits (Losses Avoided): Educating the public about forest thinning to reduce the acreages burned during wildfires and to reduce the number of structures destroyed during wildfires.

Potential Funding: Grant, County and Private funding sources

Timeline: Ongoing

Project Priority (H, M, L): H